Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	
Implementing Section 503 of RAY BAUM'S Act	WC Docket No. 18-335
Rules and Regulation Implementing the Truth in Caller ID Act of 2009	WC Docket No. 11-39

COMMENTS OF TWILIO INC.

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April 3, 2019

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I. INTRODUCTION AND SUMMARY

Twilio is pleased to comment on this NPRM proposing rules to implement Section 503 of RAY BAUM'S Act,[1] legislation which passed in 2018 and amended the Truth in Caller ID Act of 2009 ("Truth in Caller ID Act").[2] Congress has recognized that "fraudulent spoofing activity" causes significant harm to American consumers.[3] Twilio agrees and supports the efforts of Congress and the Commission to reduce harmful caller identification spoofing.

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1 *See Implementing Section 503 of RAY BAUM'S Act, Rules and Regulation Implementing the Truth in Caller ID Act of 2009*, Notice of Proposed Rulemaking, FCC 19-12, WC Docket No. 18-335, WC Docket No. 11-39 (rel. Feb. 15, 2019) ("NPRM"); Consolidated Appropriations Act, 2018, Pub. L. No. 115-141, Div. P, Title V, § 503, 132 Stat. 348, 1091-94 (2018) ("RAY BAUM'S Act") (codified as amended in 47 U.S.C. § 227(e)).

2 47 U.S.C. § 227. *See generally* Truth in Caller ID Act of 2009, Pub. L. No. 111-331, 124 Stat. 3572 (2010) ("Truth in Caller ID Act"). Consistent with the Commission's approach in the NPRM, Twilio refers to the updated statutory text as 47 U.S.C. § 227 "as amended," even though the amendments "will become effective six months after the date that" the Commission's implementing regulations are finalized. NPRM ¶ 2 n.6.

3 NPRM ¶ 2 (citing *Spoofing Prevention Act of 2017, Report of the S. Comm. on Commerce, Sci., & Transp. on S. 134*, S. Rep. No. 115-91, at 2-3 (2017)).

RAY BAUM'S Act and the NPRM rightly focus on harmful spoofing: transmissions of "misleading or inaccurate caller identification information" done "with the intent to *defraud, cause harm, or wrongfully obtain anything of value*."[4] At the same time, the legislation and the proposal correctly recognize that many productive, consumer-friendly, and even safety-enhancing reasons exist to alter caller identification information. Indeed, Congress explicitly noted that there are "legitimate reasons why calling parties may wish to alter their caller ID information."[5] The NPRM, thus, advances Congress's intent to target only malicious spoofing.

Twilio encourages the Commission to ensure that its rules do not go beyond Congress's narrow changes to the Truth in Caller ID Act, or unintentionally disadvantage providers of legitimate alterations of caller identification information. With respect to the Truth in Caller ID Act's definition of "voice service," Twilio urges the Commission to take a light-touch approach and ensure that Congress's amendment is not used to affect definitions or substantive rules outside the specific context of caller ID spoofing. For example, while Congress's definition of "voice service" for caller ID spoofing appears to include both non-interconnected (or "one-way") VoIP and interconnected (or "two-way") VoIP, Congress did not erase that distinction for other purposes. With respect to the definition of "text message," Twilio asks the Commission to proceed cautiously and (1) take more time to consider the impact of spoofing regulations on messages sent via Common Short Codes ("CSCs") and (2) wait until emerging standards like Rich Communication Services ("RCS") are more fully implemented before including those technologies within the definition of a "text message."

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4 47 U.S.C. § 227(e)(1) (emphasis added); 47 C.F.R. § 64.1604(a).

5 NPRM ¶ 4 (citing *Truth in Caller ID Act, Report of the S. Comm. on Commerce, Sci., & Transp. on S. 30*, S. Rep. No. 111-96, at 1-2 (2009) ("2009 Senate Commerce Committee Report")).

II. BACKGROUND

A. Overview of Twilio.

Twilio's services allow software developers to embed communications capabilities in their applications, enabling companies to communicate more efficiently and effectively with their customers. Software teams use Twilio's Application Programming Interfaces ("APIs") to add capabilities like voice, video, email, and messaging to their applications. Twilio powers more than 600 billion annualized interactions every year for more than 140,000 customers. More than four million developers have built applications using Twilio, embedding communications in applications that allow users to hail a ride, make a bank transaction, shop online, authenticate an account, or contact elected officials.

Twilio's platform enables developers to build, scale, and operate real-time communications within software applications. Using Twilio's software, developers are able to incorporate communications into applications that span a range of industries and functionalities, including:

- **Anonymous Communications.** Enabling users to have a trusted means of communications where they prefer not to share private information like their telephone number. Examples include conversations between drivers and riders on ridesharing apps or texts exchanged after individuals meet through a dating website.[6] Ride-share passengers on Lyft[7] and Uber,[8] hosts and guests on Airbnb,[9] and users of the dating

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6 *See* Twilio, *Masked Phone Numbers*, https://www.twilio.com/use-cases/commerce-communications/masked-phone-numbers (last visited Apr. 3, 2019).

7 *See* Twilio, *Lyft Revved Up Real-Time Communications with Twilio*, https://customers.twilio.com/249/lyft/ (last visited Apr. 3, 2019).

8 *See* Twilio, *Uber Built a Great Ridesharing Experience with SMS & Voice*, https://customers.twilio.com/208/uber/ (last visited Apr. 3, 2019).

9 *See* Twilio, *Airbnb Streamlined the Rental Experience for 60M Travelers Worldwide*, https://customers.twilio.com/214/airbnb-streamlined-global-rental-experience/ (last visited Apr. 3, 2019).

website eHarmony[10] can all communicate safely, without divulging their personal phone numbers, thanks to masked phone numbers through Twilio.

- **Alerts and Notifications.** Alerting a user that an event has occurred, such as when a table is ready, a flight is delayed, or a package is shipped.[11] CU Wireless developed proactive banking notifications for millions of credit union members to improve their banking experience by receiving low-balance alerts or deposit confirmations via SMS.[12] PayByPhone sends millions of time-sensitive text messages per month to notify customers about expiring parking reservations, helping customers avoid fines and streamlining processes for municipalities.[13]

- **Contact Center.** Improving customer support by empowering customer care teams with voice, messaging, and video capabilities that integrate with other systems to add context, such as a caller's support ticket history.[14] ING, the global financial institution, built an agile call center that supports 40 countries, replacing antiquated and clunky hardware with software, using Twilio APIs.[15] Home Depot's subsidiary, RedBeacon, built a contact center in just one month using Twilio's software APIs.[16] And the OpenGov Foundation's Article One system allows U.S. Congressional offices to manage the influx of constituents' calls.[17]

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[10] *See* Twilio, *eHarmony Improves the Online Dating Experience with Twilio*, Vimeo (Oct. 16, 2014, 3:04 PM EST), https://vimeo.com/109165879.

[11] *See* Twilio, *Account Notifications*, https://www.twilio.com/use-cases/commerce-communications/account-notifications (last visited Apr. 3, 2019).

[12] *See* Twilio, *Maps Credit Union Built SMS Banking Alerts with Twilio*, https://customers.twilio.com/957/maps-credit-union-built-sms-banking-alerts-with-twilio/ (last visited Apr. 3, 2019).

[13] *See* Twilio, *PayByPhone Helps Millions of People Avoid Parking Tickets*, https://customers.twilio.com/312/paybyphone-sends-users-payment-reminders-to-avoid-parking-tickets (last visited Apr. 3, 2019).

[14] *See* Twilio, *Contact Center*, https://www.twilio.com/use-cases/contact-center (last visited Apr. 3, 2019).

[15] *See* Twilio, *ING's Henk Kolk on the Move to an Agile, Customer-First Call Center*, https://www.twilio.com/learn/contact-center/ing-s-henk-kolk-on-the-move-to-an-agile-customer-first-call-center (last visited Apr. 3, 2019).

[16] *See* Kyle Kelly-Yahner, *Building For Millions: How RedBeacon Revamped Their Customer Contact Center In One Month*, Twilio (May 13, 2014), https://www.twilio.com/blog/2014/05/building-for-millions-how-redbeacon-revamped-their-customer-contact-center-in-one-month-nt.html.

[17] *See* Twilio, *The Future of Communicating With Congress*, https://www.twilio.com/learn/contact-center/the-future-of-communicating-with-congress (last visited Apr. 3, 2019).

- **Mobile Marketing.** Integrating messaging with marketing-automation technology, allowing organizations to deliver targeted, timely, and contextualized communications to consumers.[18] Walmart sends customers short-term discounts,[19] and UC San Diego School of Medicine promotes the health of patients and increases patient compliance using daily wellness reminders,[20] both using Twilio.

- **User Security.** Verifying user identity through two-factor authentication prior to log-in or validating transactions within an application's workflow. This adds an additional layer of security to any application.[21] Intuit's Online Payroll system protects more than 1 million businesses from online security threats with Twilio's two-factor authentication API,[22] and TransferWise helps more than 2 million customers transfer funds each month using two-factor authentication solutions built on Twilio.[23]

- **Blocking robocalls.** Twilio's technology powers Nomorobo, winner of the 2013 FTC Robocall Challenge. Nomorobo has blocked almost 1 billion unwanted robocalls while ensuring that consumers receive wanted legal calls, like school closings and prescription reminders. Verizon offers Nomorobo's solutions for free to Verizon Fios customers.[24]

- **Twilio for Social Good.** Partnering with nonprofit organizations through Twilio.org to use the power of communications to help solve social challenges, such as an SMS hotline to fight human trafficking, an emergency-volunteer dispatch system, and appointment reminders for medical visits in developing nations.[25] Crisis Text Line is a confidential 24/7 messaging service for people in crisis, powered by Twilio. On March 26, 2019,

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18 *See* Twilio, *Text Marketing*, https://www.twilio.com/solutions/text-marketing (last visited Apr. 3, 2019).

19 *See* Twilio, *Walmart Customers Receive Daily Deals Over SMS*, https://customers.twilio.com/806/walmart/ (last visited Apr. 3, 2019).

20 *See* Twilio, *UCSD School of Medicine Promotes Health & Prevents Disease with SMS*, https://customers.twilio.com/341/ucsd-school-of-medicine (last visited Apr. 3, 2019).

21 *See* Twilio, *Account Security*, https://www.twilio.com/solutions/account-security (last visited Apr. 3, 2019).

22 *See* Twilio, *Intuit Protects 1,000,000+ Businesses with Twilio*, https://customers.twilio.com/206/intuit-protects-1million-businesses-with-twilio-sms (last visited Apr. 3, 2019).

23 *See* Twilio, *How TransferWise Uses Twilio 2FA to Move Money Securely*, https://www.twilio.com/learn/account-security/transferwise-twilio-2fa (last visited Apr. 3, 2019); Twilio, *Over 90% of TransferWise Customers Adopt Twilio's Authy 2FA Security at First Login*, https://customers.twilio.com/1852/transferwise/ (last visited Apr. 3, 2019).

24 *See* Verizon, *Stop Unwanted Calls*, https://www.verizon.com/support/residential/homephone/calling-features/stop-unwanted-calls (last visited Apr. 3, 2019).

25 *See* Twilio, *Twilio for Social Good*, https://www.twilio.org/learn-about-twilio (last visited Apr. 3, 2019).

Crisis Text Line announced that more than 100 million texts had been exchanged between people in crisis and their trained counselors.[26]

B. The Commission Is Making Great Strides to Combat Robocalls, and Twilio Supports These Efforts.

The Commission has developed policies for communications technologies that will ensure consumers receive all forms of wanted communications, while developing solutions to address unwanted communications issues faced by numerous parties, including providers, carriers, developers, and consumers. By working to protect consumers from unwanted communications, the Commission has taken crucial steps to rebuild consumer trust at a "moment when [consumer] tolerance for [unwanted] messages is at an all-time low."[27]

As its CEO has written, "Twilio is fully committed to efforts to authenticate calls so the identity of callers can be proven" and agrees with the Commission's efforts to stop those who attempt to scam consumers by maliciously falsifying caller ID information.[28] These are more than mere annoyances; they are unlawful actions with countless victims.[29]

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[26] *See* Nancy Lublin, *Notes from Nancy & Bob: 100 Million Messages*, Crisis Text Line (Mar. 26, 2019), https://www.crisistextline.org/blog/notes-from-nancy-on-100-million-messages; Twilio (@twilio), Twitter (Apr. 2, 2019, 10:21 AM), https://twitter.com/twilio/status/1113129329607749634.

[27] *Petitions for Declaratory Ruling on Regulatory Status of Wireless Messaging Service*, Declaratory Ruling, FCC 18-178, WT Docket No. 08-7, ¶ 42 (rel. Dec. 13, 2018) ("2018 Wireless Messaging Ruling").

[28] Jeff Lawson, *Your Phone, Your Call – Part I – Eliminating Robocalls*, Twilio Blog (Mar. 18, 2019), https://www.twilio.com/blog/your-phone-your-call-eliminating-robocalls.

[29] *See* NPRM ¶ 1; *see also id.* at Statement of Chairman Ajit Pai (describing how one caller ID scam defrauded New York City residents out of an estimated three million dollars); *id.* at Statement of Commissioner Michael O'Rielly (noting the "despicable" impersonation of IRS agents by using robocalling and spoofing campaigns); *id.* at Statement of Commissioner Brendan Carr (noting the importance of targeting unlawful calls that originate overseas); *id.* at Statement of Commissioner Jessica Rosenworcel (noting the "insan[ity]" of robocalls that further "fraud"); *id.* at Statement of Commissioner Geoffrey Starks (noting that spoofed calls are a part of "predatory schemes [that] are alarming, unscrupulous, and must be stopped").

III. THE PROPOSED RULES CORRECTLY TARGET ILLEGITIMATE SPOOFING

RAY BAUM'S Act and the Commission's proposed rules rightly focus on malicious spoofing—spoofing done "for harmful purposes"—rather than legitimate alterations of caller identification information.[30] As the Commission noted in its 2011 report to Congress, "[i]n crafting the Truth in Caller ID Act, Congress intended to balance the drawbacks of malicious caller ID spoofing against the benefits provided by legitimate caller ID spoofing."[31] And the Commission's 2011 Truth in Caller ID Order recognized that "[n]othing in" that Order "change[d] th[e] fact" that "manipulation or alteration of caller ID information done without the requisite harmful intent does not violate the Act."[32] Both RAY BAUM'S Act and the Commission's proposed rules continue to strike the right balance on this important issue.

A. Congress and the Commission Have Recognized the Many Benefits of Caller ID Modification.

As the Commission notes in the NPRM, in enacting the Truth in Caller ID Act, "Congress recognized that there are some legitimate reasons why calling parties may wish to alter their caller ID information."[33] Indeed, there are many legitimate reasons to alter caller identification.

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30 NPRM ¶ 4.

31 *Caller Identification Information in Successor or Replacement Technologies*, 26 FCC Rcd. 8643, 8658 ¶ 32 (2011) ("2011 Report to Congress"); *see also Rules and Regulations Implementing the Truth in Caller ID Act of 2009*, Report and Order, 26 FCC Rcd. 9114, 9130 ¶ 40 (2011) ("2011 Truth in Caller ID Order").

32 2011 Truth in Caller ID Order at 9124 ¶ 25.

33 NPRM ¶ 4.

One critical need for legitimate "spoofing" is for personal protection. From the harrowing example of protecting victims of domestic violence at shelters[34] to ensuring that delivery drivers do not receive harassing calls, the ability to alter caller ID ensures that callers are not forced to share their identification when doing so could put them in harm's way. Ride-sharing services Uber and Lyft both bridge their texts and calls through an intermediate Twilio phone number, ensuring that drivers and passengers are able to communicate in the short term, while protecting drivers and passengers alike from further contact after a ride has been completed.

There are also numerous business reasons for altering caller ID. For example, many businesses "use a single telephone number, regardless of the internal extension that the call actually originates from, as the information displayed to called parties so that the called party has a better understanding of the caller's identity" and receives the right customer service number for future use.[35] Twilio customers like Arkansas Children's Hospital improve patient care through voice appointment reminders. Because the reminder calls are associated with the hospital's primary phone number, call recipients are more likely to answer and receive this important information.[36]

As these and many other examples demonstrate, the ability to alter caller ID has many legitimate uses that ensure the security of vulnerable individuals, help protect the privacy and

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[34] *See* 2009 Senate Commerce Committee Report at 2; *Truth in Caller ID Act of 2010, Report of the H. Comm. on Energy & Commerce*, H.R. Rep. No. 111-461, at 7 (2010) ("2010 House Committee Report").

[35] 2010 House Committee Report at 7.

[36] *See* Twilio, *Arkansas Children's Hospital Saved $250K with Over-the-Phone Appointment Reminders*, https://customers.twilio.com/321/arkansas-childrens-hospital (last visited Apr. 3, 2019).

safety of consumers, and encourage efficiency in businesses. Twilio applauds the approach that Congress and the Commission have taken to ensure that the updated regulations do not limit these legitimate practices.

B. The Commission Has Correctly Targeted Illegitimate Spoofing, Consistent with Congress's Intent in the Truth in Caller ID Act and RAY BAUM'S Act.

Despite the many legitimate reasons for the alteration of caller ID information, there still exists a need to prohibit such alterations that are knowingly transmitted "with the intent to defraud, cause harm, or wrongfully obtain anything of value."[37] Because Congress already "balance[d] carefully" how to address malicious spoofing without preventing legitimate alterations,[38] the Commission should interpret the statute's intent requirements strictly so that parties cannot claim that any type of spoofing causes harm. This approach is also consistent with the approach the Commission used in 2011: As the Commission noted in the 2011 Truth in Caller ID Order, Congress passed the Truth in Caller ID Act in response to "schemes that defraud consumers and threaten public safety,"[39] and the Commission accordingly "modeled" its rules on that "prohibition against knowingly engaging in caller ID spoofing with fraudulent or harmful intent."[40] This targeted approach has appropriately focused on malicious actors, while allowing beneficial uses of caller ID alterations to simplify consumer interactions, protect the identities of potentially vulnerable people, and more. Twilio urges the Commission to maintain that focus.

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37 47 U.S.C. § 227(e)(1).

38 2011 Truth in Caller ID Order at 9130 ¶ 40.

39 *Id.* at 9115 ¶ 2; *see also id.* at 9120 ¶ 17 ("The Truth in Caller ID Act is aimed at prohibiting the use of caller ID spoofing for ill intent.").

40 *Id.* at 9119 ¶ 13.

IV. THE SCOPE OF COVERED SERVICES UNDER THE COMMISSION'S RULES SHOULD REMAIN CONSISTENT WITH CONGRESS'S INTENT

Twilio encourages the Commission to ensure that its implementing regulations are consistent with Congress's intent in the Truth in Caller ID Act and RAY BAUM'S Act. The Commission has proposed to "largely track the relevant statutory language," given that "the statutory language is clear" and "mirroring that language will avoid creating ambiguity" or deviating from Congress's choices.[41] Twilio agrees.

Particularly in light of the Commission's recent Title I classification of wireless messaging,[42] Twilio also encourages the Commission to ensure that its rules follow the "light-touch" approach to regulation best "calibrated to the needs of innovators in a dynamic marketplace."[43] Here, that light-touch approach calls for hewing closely to the updates Congress made to caller identification issues in RAY BAUM'S Act, without unnecessarily expanding the scope of those regulations beyond Congress's intent or mistaking Congress's limited action in this specific context as authorization to alter established regulatory frameworks in other areas.

First, Twilio encourages the Commission to utilize Congress's new phrase "voice service" and its definition in Section 227 only in the limited context of caller ID spoofing, rather than as broad authorization or direction to reconsider the established frameworks governing particular services. More specifically, while it may be the case that Congress's definition of voice service for caller ID spoofing encompasses "any service that is interconnected with the

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41 NPRM ¶¶ 10, 12.

42 *See generally* 2018 Wireless Messaging Ruling.

43 *Id.* ¶ 48 n.166; *see also*, *e.g.*, *Restoring Internet Freedom*, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd. 311 (2018) (applying a "light-touch framework" under Title I to broadband internet access service).

public switched telephone network"[44] and thus appears to include both interconnected VoIP and one-way, non-interconnected VoIP,[45] Congress has not directed the Commission to collapse the distinction between those services elsewhere. For example, as the Commission recognizes in the NPRM,[46] Congress is well aware that 47 C.F.R. § 9.3 defines interconnected VoIP, and indeed has codified the distinction between "Interconnected VoIP service" and "Non-interconnected VoIP service" in Title 47 of the U.S. Code.[47] In some areas unrelated to caller ID spoofing, Congress and the Commission have applied legal standards and regulatory burdens differently to the two services.[48] It would be contrary to the Commission's "light-touch" approach to allow Congress's limited expansion of caller ID spoofing rules to one-way, or non-interconnected, VoIP to creep into other areas where the distinction between the two services is material.[49]

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44 47 U.S.C. § 227(e)(8)(E), as amended.

45 *See* NPRM ¶ 32.

46 *See id.* ¶¶ 6, 31.

47 47 U.S.C. § 153(25), (36) (defining both terms "[f]or the purposes of" all of Title 47, Chapter 5).

48 *See*, *e.g.*, 47 C.F.R. § 9.5(b)(1) (requiring "Interconnected VoIP service providers" to provide consumers with E911 service); *id.* § 4.3(h) (applying outage-reporting requirements to "providers of interconnected VoIP service").

49 It would also be unproductive for the Commission to include all "real-time, two-way voice communications" that use "a 10-digit telephone number or N11 service code" in the definition of "voice service." NPRM ¶ 30. Congress's carve out of "a real-time, two-way voice or video communication" from the definition of "text message," *see* 47 U.S.C. § 227(e)(8)(C), as amended, does not imply that all such voice or video communications are, in fact, voice services, as the Commission suggests, NPRM ¶ 30. If Congress had intended that result, it could easily have incorporated that phrase into the definition of "voice service." But Congress did not do that, likely because while "real-time, two-way voice or video communication" is easy to understand in the context of what is *not* a "text message" (particularly in conjunction with the affirmative definitions of "text message" that precede it in 47 U.S.C. § 227(e)(8)(C), as amended), the same "real-time, two-way voice or video communication" phrase would be expansive and vague when used to define what *is* a "voice service."

Second, the Commission should approach with caution the application of spoofing rules to messages sent using CSCs, which are "special 5 or 6 digit telephone number[s]" that "are used to send and receive SMS and MMS messages to and from mobile phones."[50] CSCs are "pre-approved by carriers to have a high throughput" to multiple users, and are commonly used for "marketing and promotions," "alerts and notifications," "two-factor authentication," and more.[51] CSCs "are administered by the Common Short Code Administration, which leases the codes to applicants"[52] for fees that exceed the cost of simply purchasing access to a 10-digit number.

Because of the expenses associated with the use of CSCs and the obligations imposed on users of CSCs through the Common Short Code Administration process—including, for example, employing contact information when responding to a user who texts keywords "HELP" and "STOP"—the sender of a short code SMS is far easier to identify than the user of a 10-digit number, and there is therefore a reduced concern that CSCs are used in connection with malicious spoofing. In addition, CSCs are registered and administered in a manner that makes spoofing them more difficult than in the case of 10-digit numbers, making messages sent via CSC safer for consumer use.

With respect to CSCs and the messages they facilitate, the Commission should be cognizant of the differences from 10-digit numbers and proceed with caution when finalizing its spoofing rules. At a minimum, these differences warrant a closer inspection. This approach is consistent with the Commission's treatment of CSCs in the 2018 declaratory ruling classifying

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50 Twilio, *Short Code*, https://www.twilio.com/docs/glossary/what-is-a-short-code (last visited Apr. 3, 2019).

51 *Id.* (capitalization omitted); *see also*, *e.g.*, 2018 Wireless Messaging Ruling ¶¶ 11, 28 n.86 (discussing CSCs as "facilitat[ing] the delivery of lawful [application-to-person] traffic").

52 2018 Wireless Messaging Ruling at ¶ 11.

wireless messaging as a Title I service. In that ruling, the Commission declined to address "whether short-code provisioning is a 'component' of wireless messaging," although it noted that CSC provisioning would not "change our analysis of what wireless messaging providers offer, how SMS and MMS wireless messaging services should be classified, or how their information-processing capabilities fit within the definition of an information service."[53]

Finally, the Commission has asked whether it should "explicitly include" "Rich Communication Services (RCS), an IP-based asynchronous messaging protocol," in the "definition of 'text message.'"[54] Twilio urges the Commission not to include RCS in the definition of "text message" at this time. To start, particularly under the light-touch approach for Title I services, Congress's choice to identify SMS and MMS, but not other messaging protocols such as RCS, in the RAY BAUM'S Act amendments weighs against the Commission's taking a different approach in its rules.[55] Moreover, RCS is still in the implementation stage, and a number of questions remain about its future, including several that may affect whether an RCS message is properly classified as a text message under the Truth in Caller ID Act. For example, it is not yet clear whether all devices will support RCS,[56] and depending on that issue and other implementation decisions, RCS capacity may come to resemble the "IP-enabled messaging services" that the Commission has suggested are not within the purview of "text messages."[57]

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53 2018 Wireless Messaging Ruling at ¶ 28 n.86.

54 NPRM ¶ 19.

55 *See*, *e.g.*, *id.* ¶ 16 (proposing to "mirro[r] th[e] statutory language" in the definition of "text message").

56 *See*, *e.g.*, Barbara Krasnoff, *RCS: What it is and why you might want it*, The Verge (Dec. 12, 2018, 3:19 PM EST), https://www.theverge.com/2018/12/12/18137937/rcs-rich-communication-service-messaging-explainer-what-is-google-chat.

57 NPRM ¶ 22.

Given the general definition of "text message" in the RAY BAUM'S Act and the NPRM, it would be premature to take the additional step of codifying this nascent technology in the Commission's rules, when so many details of its implementation and distribution remain to be determined.

V. CONCLUSION

Twilio commends the Commission's efforts to target robocalls and malicious caller ID spoofing. The regulations introduced in the NPRM will benefit consumers and target bad actors engaged in fraudulent practices. Twilio is also pleased that the Commission recognizes the legitimate uses of caller ID manipulation that protect individuals and empower businesses, and it encourages the Commission to refrain from enacting any regulations that would limit the use of emerging communications technologies that Congress did not intend to reach.

Respectfully submitted,

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April 3, 2019